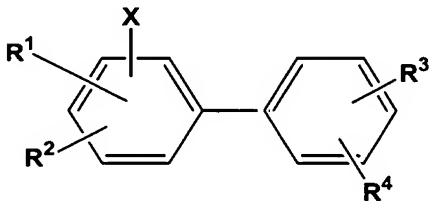
Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

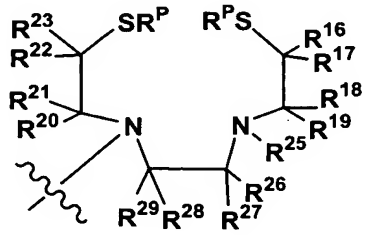
1. (currently amended) A compound of general Formula I:



I

or a pharmaceutically acceptable salt thereof, wherein

R^1, R^2 and R^3 in each instance is independently selected from the group consisting of hydrogen, halogen, C_{1-5} alkyl, cyano, carboxy(C_{1-5})alkyl, trifluoromethyl, nitro, methylamino, dimethylamino, halo(C_{1-5})alkyl, hydroxy(C_{1-5})alkyl, $(Bu)_3Sn$-, $(Bu)_3Sn(C_{1-5})$alkyl, formyl, and the tetradentate metal ligand moeity having the following formula:



wherein,

R^4 is selected from the group consisting of:

a. C_{1-5} alkylthio,

b. halo(C_{1-5})alkyl,

c. halo(C_{1-5})alkoxy,

d. carboxy(C_{1-5})alkyl,

e. hydroxy,

f. C_{1-5} alkoxy,

g. hydroxy(C_{1-5})alkyl,

h. NR^5R^6, wherein

R^5 and R^6 are independently hydrogen, halo(C_{1-5})alkyl or C_{1-5} alkyl,

i. phenyl(C_{1-5})alkyl,

j. C_{6-10} aryl,

k. heteroaryl,

l. heterocycle,

m. heterocycle(C_{1-5})alkyl, and

n. C_{3-6} cycloalkyl,

wherein said phenyl(C_{1-5})alkyl, C_{6-10} aryl, heteroaryl, heterocycle, heterocycle(C_{1-5})alkyl or C_{3-6} cycloalkyl is substituted with one of the following: C_{1-5} alkylthio, C_{1-5} alkylsulfonyl, methoxy, hydroxy, dimethylamino or methylamino,

R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}, R^{23}, R^{25}, R^{26}, R^{27}, R^{28} and R^{29} are independently selected from the group consisting of hydrogen, halogen, C_{1-5} alkyl, cyano, carboxy(C_{1-5})alkyl, hydroxy(C_{1-5})alkyl, trifluoromethyl, nitro, methylamino, dimethylamino, halo(C_{1-5})alkyl, phenyl(C_{1-5})alkyl, C_{3-6} cycloalkyl, heterocycle (C_{1-5})alkyl and carbonyl, and R^P is a ~~sulhydryl~~ sulfhydryl protecting group,

and,

X is hydrogen, ^{125}I, ^{123}I, ^{131}I, ^{18}F, ^{76}Br, ^{77}Br or $Sn(alkyl)_3$.

2. (original) A compound of claim 1, wherein

R^1, R^2 and R^3 are hydrogen or C_{1-5} alkyl.

3. (original) A compound of claim 2, wherein

R^1, R^2 and R^3 are hydrogen,

and,

R^4 is halo(C_{1-5})alkyl, hydroxy, C_{1-5} alkoxy or NR^5R^6, wherein

R^5 and R^6 are independently hydrogen, halo(C_{1-5})alkyl or C_{1-5} alkyl.

4. (original) A compound of claim 3, wherein

R^4 is NR^5R^6, wherein

R^5 and R^6 are independently hydrogen, halo(C_{1-5})alkyl or C_{1-5} alkyl.

5. (original) A compound of claim 1, wherein

X is ^{123}I or ^{18}F.

6. (original) The compound of claim 1, wherein

R^1 is methylamino or dimethylamino,

R^2 is hydrogen,

R^3 is halo(C_{1-5})alkyl or (Bu_3)Sn(C_{1-5})alkyl,

R^4 is hydroxy or hydroxy(C_{1-5})alkyl,

and,

X is hydrogen.

7. (original) The compound of claim 6, wherein

R^1 is dimethylamino,

R^3 is ^{18}fluoro(C_{1-5})alkyl,

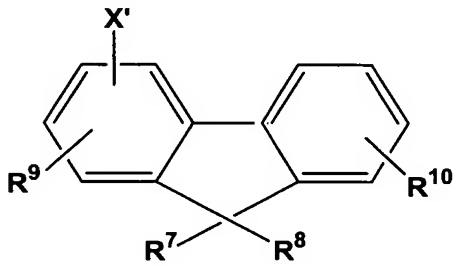
and,

R^4 is hydroxy.

8. (original) The compound of claim 7, wherein R^3 is ^{18}fluoromethyl or ^{18}fluoroethyl.

9. (original) The compound of claim 8, wherein R^3 is ^{18}fluoroethyl.

10. (currently amended) A compound of general Formula II:



II

or a pharmaceutically acceptable salt thereof, wherein:

R^9 and R^{10} in each instance is independently selected from the group consisting of:

a. hydrogen,
b. C_{1-5} alkyl,
c. cyano,
d. trifluoromethyl,
e. nitro,
f. halogen,
g. hydroxy(C_{1-5})alkyl,
h. halo(C_{1-5})alkyl,
i. C_{1-5} alkylthio,
j. halo(C_{1-5})alkoxy,
k. carboxy(C_{1-5})alkyl,
l. hydroxy,

m. C_{1-5} alkoxy,

n. $NR^{11}R^{12}$, wherein

R^{11} and R^{12} are independently hydrogen, halo(C_{1-5})alkyl or C_{1-5} alkyl,

o. phenyl(C_{1-5})alkyl,

p. C_{6-10} aryl,

q. heteroaryl,

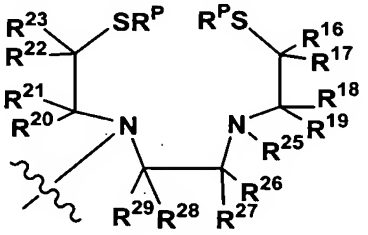
r. heterocycle,

s. heterocycle(C_{1-5})alkyl, and

t. C_{3-6} cycloalkyl,

wherein said phenyl(C_{1-5})alkyl, C_{6-10} aryl, heteroaryl, heterocycle, heterocycle(C_{1-5})alkyl or C_{3-6} cycloalkyl is substituted with one of the following: C_{1-5} alkylthio, C_{1-5} alkylsulfonyl, methoxy, hydroxy, dimethylamino or methylamino,

u. the tetradentate metal ligand moiety having the following formula:



wherein, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}, R^{23}, R^{25}, R^{26}, R^{27}, R^{28} and R^{29} are independently selected from the group consisting of hydrogen, halogen, C_{1-5} alkyl, cyano, carboxy(C_{1-5})alkyl, hydroxy(C_{1-5})alkyl, trifluoromethyl, nitro, methylamino, dimethylamino, halo(C_{1-5})alkyl, phenyl(C_{1-5})alkyl, C_{3-6} cycloalkyl,

heterocycle (C_{1-5})alkyl and carbonyl, and R^P is a ~~sulhydryl~~ sulfhydryl protecting group,

R^7 and R^8 in each instance is independently selected from the group consisting of hydrogen, hydroxy, C_{1-5} alkyl, C_{1-5} alkoxy, halogen, carboxy(C_{1-5})alkyl, trifluoromethyl, and halo(C_{1-5})alkyl, phenyl(C_{1-5})alkyl, C_{3-6} cycloalkyl, heterocycle(C_{1-5})alkyl, or R^7 and R^8 can be taken together to form a carbonyl,

and,

X' is ^{125}I, ^{123}I, ^{131}I, ^{18}F, ^{76}Br, ^{77}Br or Sn(alkyl)$_3$.

11. (original) A compound of claim 10, wherein

R^9 is hydrogen.

12. (original) A compound of claim 11, wherein

R^7 and R^8 in each instance is independently selected from the group consisting of hydrogen, hydroxyl, C_{1-5} alkyl, halogen, and halo(C_{1-5})alkyl, or R^7 and R^8 can be taken together to form a carbonyl.

13. (original) A compound of claim 12, wherein

R^{10} is selected from the group consisting of cyano, nitro and $NR^{11}R^{12}$, wherein

R^{11} and R^{12} are independently hydrogen or C_{1-5} alkyl,

and,

R^7 and R^8 are independently hydrogen or hydroxyl.

14. (original) A compound of claim 13, wherein

R^{10} is $NR^{11}R^{12}$, wherein

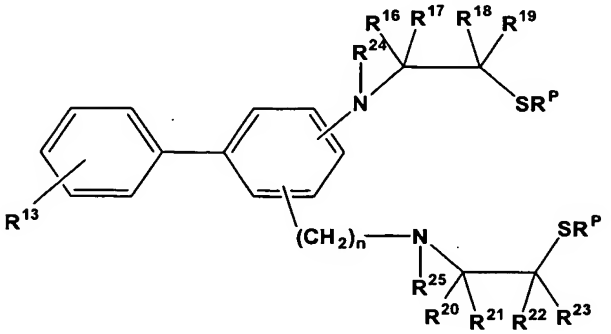
R^{11} and R^{12} are independently hydrogen, methyl or ethyl,

and,

R^7 and R^8 are both hydrogen.

15. (original) The compound of claim 14, wherein X' is ^{123}I or ^{18}F.

16. (original) A compound of general Formula III:



III

or a pharmaceutically acceptable salt thereof, wherein:

n is zero or one,

R^{13} is selected from the group consisting of:

a. C_{1-5} alkyl,

b. cyano,

c. trifluoromethyl,

d. nitro,

e. halo(C_{1-5})alkyl,

f. C_{1-5} alkylthio,

g. halogen,

h. halo(C_{1-5})alkoxy,

i. carboxy(C_{1-5})alkyl,

j. hydroxy,

k. hydroxy(C_{1-5})alkyl,

l. C_{1-5} alkoxy,

m. $NR^{14}R^{15}$, wherein

R^{14} and R^{15} are independently hydrogen, halo(C_{1-5})alkyl or C_{1-5} alkyl,

n. phenyl(C_{1-5})alkyl,

o. C_{6-10} aryl,

p. heteroaryl,

q. heterocycle,

r. heterocycle(C_{1-5})alkyl, and

s. C_{3-6} cycloalkyl,

wherein said phenyl(C_{1-5})alkyl, C_{6-10} aryl, heteroaryl, heterocycle, heterocycle(C_{1-5})alkyl or C_{3-6} cycloalkyl is substituted with one of the following: C_{1-5} alkylthio, C_{1-5} alkylsulfonyl, methoxy, hydroxy, dimethylamino or methylamino,

R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}, R^{23}, R^{24} and R^{25} in each instance is independently selected from the group consisting of hydrogen, halogen, C_{1-5} alkyl, cyano, carboxy(C_{1-5})alkyl, hydroxy(C_{1-5})alkyl, trifluoromethyl, nitro, methylamino, dimethylamino, halo(C_{1-5})alkyl, phenyl(C_{1-5})alkyl, C_{3-6} cycloalkyl, heterocycle, heteroaryl, C_{6-10} aryl, (C_{1-5})alkyl and carbonyl,

and,

R^P is a sulfhydryl protecting group.

17. (original) A compound of claim 16, wherein

R^{13} is $NR^{14}R^{15}$, wherein

R^{14} and R^{15} are independently hydrogen or C_{1-5} alkyl.

18. (original) A compound of claim 17, wherein

n is one,

R^{16} and R^{17} are both hydrogen or are taken together to form a carbonyl,

and,

R^{18}, R^{19}, R^{22}, R^{23}, R^{24} and R^{25} in each instance is independently selected from the group consisting of hydrogen and C_{1-5} alkyl.

19. (original) A compound of claim 18, wherein R^{16}, R^{17}, R^{20}, R^{21}, R^{22}, R^{23}, R^{24} and R^{25} are hydrogen,

and,

R^{18} and R^{19} are both C_{1-5} alkyl.

20. (original) A compound of claim 18, wherein R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{24} and R^{25} are hydrogen,

and,

R^{22} and R^{23} are both C_{1-5} alkyl.

21. (original) A compound of claim 18, wherein R^{16} and R^{17} are taken together to form a carbonyl.

22. (original) A compound of claim 21, wherein R^{18} and R^{19} are both C_{1-5} alkyl,

and,

R^{20}, R^{21}, R^{22}, R^{23}, R^{24} and R^{25} are hydrogen.

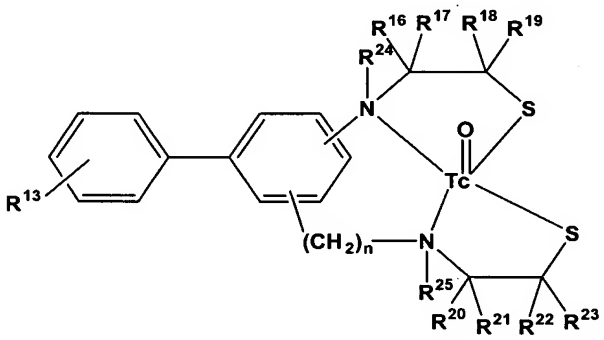
23. (original) A compound of claim 21, wherein R^{18}, R^{19}, R^{20}, R^{21}, R^{24} and R^{25} are hydrogen,

and,

R^{22} and R^{23} are both C_{1-5} alkyl.

24. (original) A compound of claim 21, wherein R^{18}, R^{19}, R^{20}, R^{21}, R^{22}, R^{23}, R^{24} and R^{25} are hydrogen.

25. (currently amended) A radioisotope complex of a compound of claim 18 having the Formula:



provided that one of R^{24} and R^{25} is selected from the group consisting of:

a. hydrogen,

b. C_{1-5} alkyl,

~~b. trifluoromethyl,~~

~~c. halo(C_{1-5})alkyl,~~

~~d. carboxy(C_{1-5})alkyl,~~

~~e. phenyl(C_{1-5})alkyl,~~

~~f. C_{6-10} aryl,~~

~~g. heteroaryl,~~

~~h. heterocycle,~~

~~i. heterocycle(C_{1-5})alkyl, and~~

~~j. C_{3-6} cycloalkyl,~~

c. trifluoromethyl,

d. halo(C_{1-5})alkyl,

e. carboxy(C_{1-5})alkyl,

f. phenyl(C_{1-5})alkyl,

g. C_{6-10} aryl,

h. heteroaryl,

i. heterocycle,

j. heterocycle(C_{1-5})alkyl, and

k. C_{3-6} cycloalkyl,

wherein said phenyl(C_{1-5})alkyl, C_{6-10} aryl, heteroaryl, heterocycle, heterocycle(C_{1-5})alkyl or C_{3-6} cycloalkyl is substituted with one of the following: C_{1-5} alkylthio, C_{1-5} alkylsulfonyl, methoxy, hydroxy, dimethylamino or methylamino,

the other of R^{24} and R^{25} represents an unsubstituted position.

26. (original) A complex of claim 25, wherein

R^{13} is $NR^{14}R^{15}$, wherein

R^{14} and R^{15} are independently hydrogen or C_{1-5} alkyl,

R^{16}, R^{17}, R^{18}, R^{19}, R^{20} and R^{21} are hydrogen,

R^{24} and R^{25} are hydrogen or unsubstituted,

and,

R^{22} and R^{23} are both C_{1-5} alkyl.

27. (original) The complex of claim 26, wherein

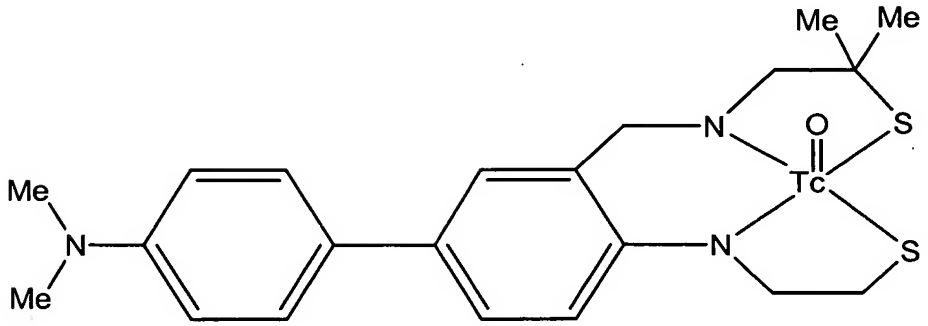
R^{14} and R^{15} are independently hydrogen or methyl,

R^{24} and R^{25} are unsubstituted,

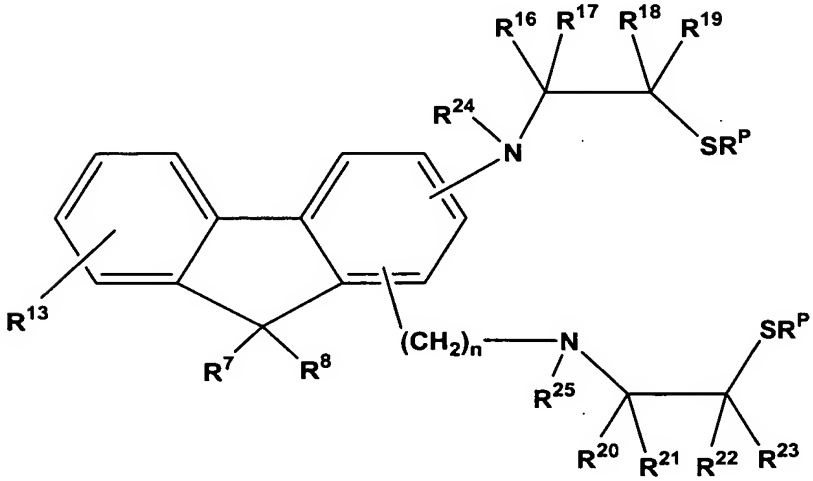
and,

R^{22} and R^{23} are both methyl.

28. (currently amended) The complex of claim 27 having the following structure:



29. (original) A compound of general Formula IV:



IV

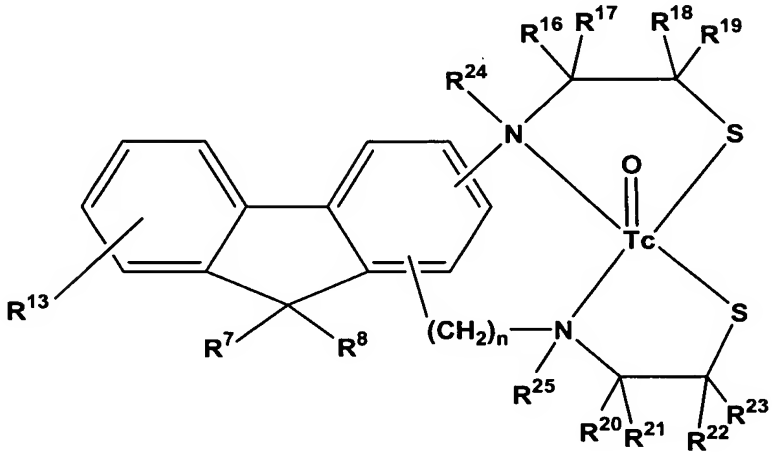
or a pharmaceutically acceptable salt thereof, wherein:

R^{13}, R^{P}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}, R^{23}, R^{24} and R^{25} are as described for Formula III,

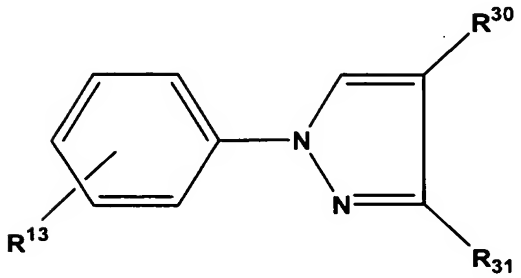
and,

R^{7} and R^{8} are as described for Formula II.

30. (currently amended) A radioisotope complex of a compound of claim 29 having the Formula:



31. (original) A compound of general Formula V:



V

or a pharmaceutically acceptable salt thereof, wherein:

R^{13} is selected from the group consisting of:

a. C_{1-5} alkyl,

b. cyano,

c. trifluoromethyl,

d. nitro,

e. halo(C_{1-5})alkyl,

f. C_{1-5} alkylthio,

g. halogen,

h. halo(C_{1-5})alkoxy,

i. carboxy(C_{1-5})alkyl,

j. hydroxy,

k. hydroxy(C_{1-5})alkyl,

l. C_{1-5} alkoxy,

m. $NR^{14}R^{15}$, wherein

R^{14} and R^{15} are independently hydrogen, halo(C_{1-5})alkyl or C_{1-5} alkyl,

n. phenyl(C_{1-5})alkyl,

o. C_{6-10} aryl,

p. heteroaryl,

q. heterocycle,

r. heterocycle(C_{1-5})alkyl, and

s. C_{3-6} cycloalkyl,

wherein said phenyl(C_{1-5})alkyl, C_{6-10} aryl, heteroaryl, heterocycle, heterocycle(C_{1-5})alkyl or C_{3-6} cycloalkyl is substituted with one of the following: C_{1-5} alkylthio, C_{1-5} alkylsulfonyl, methoxy, hydroxy, dimethylamino or methylamino,

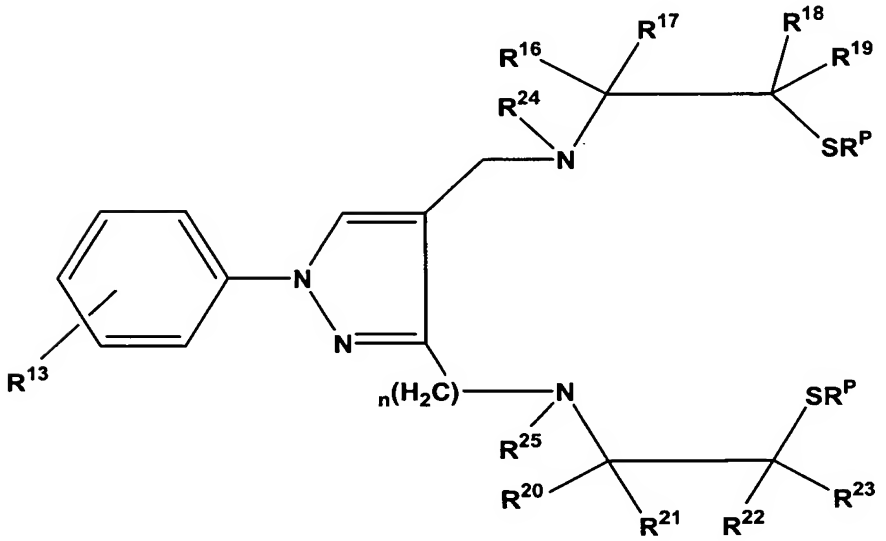
and,

R^{30} and R^{31} are selected from the group consisting of hydrogen, hydroxy, hydroxy(C_{1-5})alkyl, C_{1-5} alkyl, C_{1-5} alkoxy, (C_{1-5})alkyl carboxy, halogen, carboxy(C_{1-5})alkyl, trifluoromethyl, and halo(C_{1-5})alkyl, phenyl(C_{1-5})alkyl, C_{3-6} cycloalkyl, heterocycle(C_{1-5})alkyl,

provided,

if R^{13} is other than $NR^{14}R^{15}$, wherein one of R^{14} and R^{15} is ^{18}Fluoro(C_{1-5})alkyl, then one of R^{30} and R^{31} is selected from the group consisting of ^{125}I, ^{123}I, ^{131}I, ^{18}F, ^{76}Br, ^{77}Br and ^{18}Fluoro(C_{1-5})alkyl.

32. (original) A compound of general Formula VI:



VI

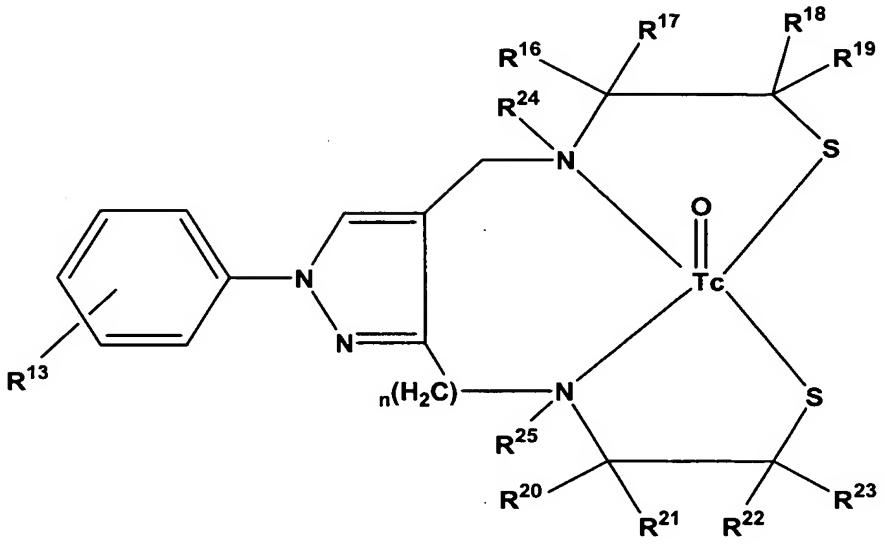
or a pharmaceutically acceptable salt thereof, wherein:

R^{13} is as described for Formula V,

and,

R^P, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}, R^{23}, R^{24} and R^{25} are as described for Formula III.

33. (currently amended) A radioisotope complex of a compound of claim 32 having the Formula:



34. (currently amended) A pharmaceutical composition comprising a compound of any one of ~~claims 1-33~~ claims 1, 10 and 31.

35. (currently amended) A diagnostic composition for imaging amyloid deposits, comprising a radiolabeled compound of any one of ~~claims 1-33~~ claims 1, 10 and 31; and a pharmaceutically acceptable excipient or diluent.

36. A method of imaging amyloid deposits, comprising:

a. introducing into a mammal a detectable quantity of a diagnostic composition of claim 35; and

b. allowing sufficient time for the labeled compound to be associated with amyloid deposits; and

c. detecting the labeled compound associated with one or more amyloid deposits.